Utilization of Freeze Protocols to Improve Seed Viability to Enhance Reclamation

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This research began over three years ago. During the summer of 2012 numerous bare patches were noticed in the hills that were mined before reclamation was mandatory. The problem that is being faced is getting sagebrush and various other commonly used reclaiming plants. The method that is being tested is if there is an impact on germination rates depending on amount of time spent in the freeze chamber. This research encompassed various amount of freezing periods spanning from 2 weeks, 4 weeks, 6 weeks, 8 weeks, and control. The results prove that there is a drastic difference between the times in the freeze chamber to one another. The results showed that sagebrush that with two weeks in the freeze chamber was the best with 20/20 the rest of the test going down steadily from there. Rubber rabbit brush didn't have a huge impact with the freezing and didn't produce any substantial results. Gardner salt bush didn't have a huge impact with the freezing and didn't produce any substantial results. This shows a big impact on what can happen with a freezing period. There is an optimal freezing for all plants but it is a matter of how long and how cold. The application of this can be widespread through the mining and reclamation fields throughout the United States and even beyond that.

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